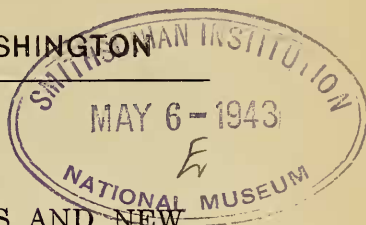


PROCEEDINGS  
OF THE  
BIOLOGICAL SOCIETY OF WASHINGTONTWO NEW SPECIES OF LICHENS AND NEW  
RECORDS for WASHINGTON STATE  
and NORTH CAROLINA.

BY ALBERT W. C. T. HERRE.

In 1917 I published a paper under the title "Preliminary Notes on the Lichens of Whatcom County, Washington", in which 125 species were listed, together with brief notes on them. At that time a considerable number of specimens had been laid aside until comparison could be made with other material, or until the literature could be further consulted. In working up these specimens, and in studying some collections obtained in the last few years, additions have been made to the known lichen flora of Whatcom county and these are herewith presented. It is evident that the lichen flora of this north-western corner of our country is only partially known. Any intensive collecting at high altitudes on the ice-clad peaks of Whatcom County would add greatly to the number of species known. The lowlands of the western half of the county have been so devastated by the combined efforts of lumberman and farmer that some of their characteristic lichens are practically extinct, but the eastern half of the county is still almost untouched and would give a rich harvest of rare and little known species. The 19 plants here listed, added to the 125 previously published, make a total of 144 lichens definitely known to occur in Whatcom County. This number is certainly less than half of those which occur within the limits of the county. Those of us who have collected and studied the flowering plants of Whatcom County know that it has a rich and varied flora, but few realize that its lichen flora is equally abundant and diversified.

1. *Staurothele glacialis* Herre, sp. nov.

Thallus effusus tenuis uniformis laevigatus e pallido ad fusciscentem umbrinus, substratum arcte obducens. Apothecia parvula, dispersa, .1-.3 lata, sessilia, nigra, sub-globosa, ad basin non constricta, ostiolo punctiformis; gonidia hymenalia crebra, oblonga et subglobosa, parva, pallide viridia; asci oblongo-clavati; sporae binae, primum decolores, postremum fuscae, oblongo-ellipsoideae, murales, cellulis in seriebus superpositis 4-8, in seriebus horizontalibus 2-3, 9.3-14 $\mu$  latae et 21.7-31 $\mu$  longae; hymenium caeruleum cum I.

Ad saxa vulcanica prominentia ex glacies, 7,000 ped. supra-mare; Mt. Baker, Whatcom County, Washington.

The thin smooth uniform and effuse thallus is pale brownish clay to dark umber, and firmly adherent to the substratum. The minute to very small sessile subglobose apothecia are .1 to .3 mm. in diameter, not basally constricted, the dot-like ostiole barely evident. The abundant minute hymenial gonidia are pale greenish; the asci are oblong clavate, with 2 spores which are at first colorless, becoming dark brown. The spores are 3-7 septate transversely, and 2 or irregularly 3 septate longitudinally, 9.3-14 $\mu$  wide and 21.7-31 $\mu$  long. The hymenium is blue with I.

Occurring on lava rocks at 7,000 feet altitude, projecting from the ice cap of Mt. Baker, Whatcom County, Washington.

2. *Biatorrella Kulshanensis* Herre, sp. nov.

Thallus epilithicus, crustaceus, uniformis, laevigatus, bene evolutus, sat tenuis, substrato arcte adherens, areolatus, rimulosus (areolae minores, irregulares), marginum plus minus lobulatae, sorediis et isidiis non praeditus, albido-cinereus et atro-cinereus demum nigrescens, in ambitu bene limitatus, hypothallus ater bene evolutus; KOH-; CaCl<sub>2</sub>0<sub>2</sub>-; medulla alba, I-.

Apothecia lecideina, nigra, parva, innata, primum depressa demum plana et parum convexulam, .4-.8 mm. lata, nigricans, opaca, epruinosa; margo cum disco concolore, tenuis, mox evanescens; epithecium nigrovirescens, 24-30 $\mu$  altum; hypothecium crassum, decolor, 90-120 mm. altum; hymenium decolor, I caeruleum; paraphyses filiformes, simplices, eseptatae, laxiuscule contextae; asci crebri, oblongi-clavati, myriospori, 18-22 $\mu$  latae et 55-68 $\mu$  longae; sporae decolores, simplices, sub-globosae ad oblongae, 1-1.5 $\mu$  latae et 2-3.5 $\mu$  longae.

Ad saxa vulcanica, 7,500 ped. supra mare, Mt. Baker, Whatcom County, Washington.

The well developed smooth thin thallus is whitish gray and darkening, becoming black, areolate, rimose, firmly adherent to the substratum, the areolae small; some of the areolae are elongate and minutely lobulate at the margin, which is marked by a black hypothallus; no soredia or isidia; no chemical reactions.

Apothecia lecideine, black, very small, .4-.8 mm, wide, innate to very

slightly emergent; plane to very little convex, the thin black proper margin soon disappearing; the dark green epithecium is 24–30 mm. high; the wide colorless hypothecium is 90–120 mm. broad; the numerous asci are broadly club-shaped, 18–22 by 55–68 $\mu$ ; the hyaline hymenium is blue with I; the paraphyses are simple, slender, without septae, lax and twining; the subglobose to oblong ellipsoid spores are 1–1.5 by 2–3.5 $\mu$ .

Only a fragment of this lichen was secured from a lava pinnacle projecting above the ice-cap on Mt. Baker, at 7,500 feet. The plant has the aspect of a *Buellia* or *Lecidea*.

Kulshan was the native name of the glacier-clad volcano called Mt. Baker on our maps.

3. *Arthopyrenia analeptella* (Nyl.) Arnold

At 6,000 feet, on Heliotrope Ridge, Mt. Baker.

4. *Chaenotheca phaeocephala* (Turner) Th. Fries

On dead and rotting conifers, Chuckanut Mt.

5. *Solorina saccata* (L.) Ach.

On earth at the foot of rocks projecting above the ice cap, at 7,000 feet, Mt. Baker.

6. *Lecidea elata* Schaerer

On Skyline Ridge, Mt. Baker, at about 7,000 feet. This is the *Lecidea amylacea* (Ach.) Tuck. of Fink's Manual.

7. *Lecidea fusco-rubens* Nyl.

Mt. Baker, at 6,500 feet. Spores 5.5–7.75 by 12.4–18.6 mikrons.

8. *Lecidea granulosa* (Ehrht.) Ach.

at 7,500 feet, on earth, Mt. Baker, Skyline Ridge. Thallus red with KOH; hypothecium colorless to pale yellow. Apothecia reddish brown to black.

9. *Lecidea myriocarpella* (Merrill) A. Zahlbr.

Formerly abundant on old bridges and bridge timbers at Bellingham. In recent years all the old bridges and trestles so conspicuous at Bellingham have been replaced by concrete, or eliminated altogether.

10. *Lecidea pantherina* (Hoff.) Ach.

At 7,000 feet on Skyline Ridge, Mt. Baker. Thallus yellow, then blood red with KOH, and exactly like specimens I collected in Styria. Spores 5 to 6 by 9 to 12 mikrons.

11. *Lecidea speira* Ach.

At 6,000 feet, Heliotrope Ridge, Mt. Baker.

12. *Lecidea vulgata* A. Zahlbr. f. *granulosa* A. Zahlbr.

(*Lecidea goniophila* f. *granulosa* Jatta).

Mt. Baker, at 6,000 and 7,000 feet. Thallus without chemical reactions. Hypothecium colorless; epithecium thick, purplish dusky, the color often extending downward through the hypothecium; paraphyses more or less confluent; thecium deep blue with I; spores 4 to 8 in the asci, 9 to 14 by 14 to 22 mikrons. The specimens would be considered a new species by many.

13. *Rhizocarpon ambiguum* (Schaerer) A. Zahlbr.  
Mt. Baker, at 7,500 feet. Spores bilocular, constricted at the middle, 10.5 to 13 by 21 to 28 mikrons.
14. *Gyrophora vellea* (L.) Ach.  
Heliotrope Ridge, Mt. Baker, at 6,000 feet. Specimens small, rather depauperate and off color, exactly like those I collected in the Austrian Alps and specimens sent me by Dr. Edward Frey which he collected in Switzerland.
15. *Acarospora rufescens* (Sm.) Bausch  
Of general occurrence in the mountains.
16. *Lecanora calcarea* (L.) Sommerf.  
Mt. Baker, at 6,000 feet. Spores globose to ellipsoid, 9.5 to 14 mikrons broad by 14 to 22 long.
17. *Lecanora laevata* Nyl.  
Mt. Baker, at 6,000 feet.
18. *Lecanora polytropa* (Ehrh.) Rabenh.  
Mt. Baker, on Skyline Ridge at 6,500 feet, and on rocks projecting from the ice cap above Heliotrope Ridge, at 7,000 feet.
19. *Buellia colludens* (Nyl.) Arnold.  
Mt. Baker, at 7,500 feet.

At Russell Lake, Pacific County, Washington, I collected the following:

At Russell Lake, Pacific County, Washington, I collected the following: *Graphina anguina* (Mont.) Müll Arg.

Spores 9 to 21 mikrons broad by 35.5 to 52.7 mikrons long. This species does not seem to have been reported previously from North America.

From Dr. P. O. Schallert, of Winston-Salem, I received for determination a small and wretched specimen occurring on bark in Forsyth County, N. C. It is *Lecanora anoptiza* Nylander. Spores globose to sub-globose, 6 to 8 mikrons in diameter. Thallus uniform, brownish gray; apothecia purplish brown, the margin becoming crenate and the apothecia finally lobulate. This obscure lichen of the *Lecanora subfusca* group has not hitherto been reported from the United States.

From my friend C. L. Brown, of Larkspur, Marin County, California, additional examples of *Lecanora anoptiza* Nyl. were received. One was from Muir Woods, the other near Mill Valley. Thallus dark, more or less greenish gray; apothecia brown; paraphyses with enlarged brown or pale umber tips, often branched or bifurcate; thecium vivid blue with I.